ORIGINAL FILE

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED
JAN 19 1988
Federal Communications Commission
Office of the Secretary

In the Matter of	)	
	)	
Advanced Television Systems and Their Impact on the Existing Television Broadcast Service	)	MM Docket No. 87-268
	)	RM-5811
Review of Technical and Operational Requirements: Part 73-E, Television Broadcast Stations	)	
	)	
Reevaluation of the UHF Television Channel and Distance Separation Requirements of Part 73 of the Commission's Rules	)	

REPLY COMMENTS OF NORTH AMERICAN PHILIPS CORPORATION

Edward J. Goldstein, Esq.

Dr. Larry J. French
Dr. Caaj Greebe
William F. Guerinot
Ronald L. Marsiglio
Charles W. Rhodes
Dr. Mark M. Rochkind
Arpad G. Toth
Mikhail Tsinberg

NORTH AMERICAN PHILIPS CORPORATION
100 East 42nd Street
New York, New York 10017
(212) 850-5457

Of Counsel:
James L. Casserly
Squire, Sanders & Dempsey
1201 Pennsylvania Ave., N.W.
Washington, D.C. 20004
(202) 626-6717

January 19, 1988

0441

TABLE OF CONTENTS

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems and Their Impact on the Existing Television Broadcast Service	)	MM Docket No. 87-268
	)	RM-5811
Review of Technical and Operational Requirements: Part 73-E, Television Broadcast Stations	)	
Reevaluation of the UHF Television Channel and Distance Separation Requirements of Part 73 of the Commission's Rules	)	

REPLY COMMENTS OF NORTH AMERICAN PHILIPS CORPORATION

I. INTRODUCTION AND SUMMARY

North American Philips Corporation ("NAPC") hereby submits its reply to comments filed in response to the Commission's Notice of Inquiry concerning advanced television ("ATV") systems and technologies. As discussed below, the first-round comments demonstrate considerable support for the positions of NAPC with respect to three critical issues: (1) pursuing high definition television ("HDTV") as an ATV goal; (2) providing NTSC compatibility (and retaining NTSC as a standard); and (3) deferring an

HDTV spectrum allocation decision and adopting a single HDTV format.

Specifically, the comments clearly affirmed that HDTV is the proper goal for the American viewing public notwithstanding its requirement of more than 6 MHz bandwidth. Moreover, most comments viewed compatibility with NTSC as a crucial factor in the consideration of an HDTV standard; similarly, many comments favored retaining NTSC as a standard during a transition to HDTV. Finally, the clear thrust of opinion was that the Commission should adopt a single HDTV standard and should not decide upon HDTV spectrum boundaries (or other related radio frequency issues such as interference and taboos) before its consideration of particular HDTV proposals. In the comments that follow, we briefly reiterate our position with respect to these issues in light of the record thus far.

II. HDTV IS THE PROPER ATV GOAL FOR THE UNITED STATES.

The clear consensus among interested parties is that HDTV -- rather than merely "enhanced" NTSC -- is the proper advanced television goal for the United States.[1] Acceptance of HDTV as the ATV goal carries several important implications.

1/ Comments of Association of Independent Television Stations, Inc. ("INTV") at 2-3; Comments of Corporation for Public Broadcasting, National Association of Public

(Footnote 1 continued on next page)

First, the selection of HDTV as the ATV goal for terrestrial broadcasting fulfills the essential requirement for picture-quality parity among all distribution media, including terrestrial broadcasting, CATV, Direct Broadcast Satellite, and closed-system video tape and disc players. We believe that such parity not only will spur competition among the distribution media, but also will help preserve local terrestrial broadcast service as a primary means of communicating news, information, and entertainment to the United States public. We reiterate our position that the terrestrial broadcast service must not be put at risk of becoming a second-class and, eventually, an extinct communications service.

Second, HDTV as the ultimate ATV goal permits enhanced-definition television ("EDTV") to serve as an intermediate step to HDTV. NAPC applauds the efforts of EDTV standards generators. However, we reemphasize our position that an intermediate, EDTV standard can occupy the continuum between NTSC and HDTV only if it is both forward compatible to HDTV and backward compatible to NTSC.[2] Stated

---

(Footnote 1 continued from previous page)
Television Stations, and Public Broadcasting Service ("CPB et al.") at 5-9, 13-14; Comments of Cox Enterprises, Inc. ("Cox") at 11-12; and Comments of National Association of Broadcasters ("NAB") at 13-15.

2/ Forward compatibility may not require that EDTV wait until an HDTV standard is selected; however, the basic
(Footnote 2 continued on next page)

differently, there must be only one integrated set of ATV transmission standards which ultimately provide for HDTV. Otherwise, the marketplace would likely be confused by a multitude of EDTV standards and the absence of a clear path to HDTV. This chaos would chill innovation and would discourage manufacturers from producing equipment, particularly in light of the danger that the equipment would be obsoleted in the short run. We would also reiterate that an EDTV proposal cannot be supported if: (1) it would perceptibly degrade the picture quality on NTSC receivers currently in use, or (2) it is not useable by all distribution media. Equally important, promulgation of an EDTV standard must not delay the introduction of HDTV.[3]

Third, HDTV as the country's ATV goal implies acceptance of the fact that more than 6 MHz of rf spectrum will be required for terrestrial broadcasting.[4] Our

---

(Footnote 2 continued from previous page)
parameters of the HDTV system to be implemented should be known.

3/ Illustratively, the David Sarnoff Research Center has indicated that RCA's Advanced Compatible TV ("ACTV") system will not be ready until 1992. This may well be too late given the introduction of HDTV in Japan next year and in Europe shortly thereafter. Moreover, according to a spokesman for the Sarnoff Research Center, a high-definition version of ACTV will not be ready until the late 1990s. See "Consumer Electronics Show Daily," January 9, 1988, at 10, 54.

4/ See, for example, Comments of CPB et al. at 18. Among HDTV systems proponents, to our knowledge only the Del
(Footnote 4 continued on next page)

preliminary studies indicate that most if not all of the additional spectrum needed to provide terrestrial broadcasters with augmentation channels of up to 6 MHz may be available within the UHF and VHF television spectrum without major changes to the Commission's channel allocation plan. Changes in UHF taboos and guardband frequencies may lend themselves to this purpose.

III. THERE IS BROAD AGREEMENT THAT NTSC COMPATIBILITY SHOULD BE ACCORDED GREAT WEIGHT IN THE CONSIDERATION OF AN HDTV STANDARD.

The first-round comments reflected significant support for the proposition that the U.S. transmission standard for HDTV should be compatible with NTSC.[5] In fact, it is fair to infer from the comments that, if an NTSC-compatible HDTV standard could provide a picture with as high a quality as that provided by an incompatible standard, all other things being equal, the vote for NTSC receiver compatibility would be virtually unanimous. In addition,

---

(Footnote 4 continued from previous page)
Rey Group (Richard Iredale) has published technical specifications for an HDTV system that does not require more than 6 MHz.

5/ See, for example, Comments of the Association of Maximum Service Telecasters ("MST") at 23-24; Comments of Capital Cities/ABC, Inc. at 4-5; Comments of Del Rey Group (Richard Iredale), Appendix at 6; Comments of GE Consumer Electronics Business ("GE") at 14, 25; Comments of Hitachi, Ltd. at 2; Comments of NAB at 11-12; and Comments of National Broadcasting Company at 9.

most interested parties recognize the need to retain NTSC as a broadcast standard so that the installed base of NTSC broadcast and reception equipment does not become obsolete in the transition to HDTV.[6]

We reiterate our firm belief that NTSC remains a vital, developing standard that not only will continue to grow in its own right, but also will constitute the most reasonable base upon which to build high-definition performance. Of course, this is not mere speculation on our part. HDS-NA, the North American Philips HDTV proposal, is based upon a logical progression of the NTSC standard, will ensure continued availability of non-degraded signals to NTSC receivers, and will provide picture quality (together with CD-quality sound) at least the equivalent of MUSE.

IV. THE COMMISSION SHOULD ADOPT A SINGLE HDTV STANDARD, BUT DEFER HDTV SPECTRUM DECISIONS UNTIL HDTV PROPOSALS ARE BEFORE IT IN A STANDARDS-SETTING PROCEEDING.

In our first-round comments, we expressed strong support for Commissioner Quello's position that the Commission should take no action that could foreclose the availability of additional spectrum for ATV until an ATV system is selected. Other parties joined NAPC in this

---

6/ See, for example, Comments of National Association of Broadcasters at 19-20; and Comments of New York Institute of Technology, Science and Technology Research Center, at 15-16. See also Comments cited at note 5, supra.

position.[7] Moreover, we and several other interested parties strongly urged that the Commission adopt a single HDTV standard. A single standard (or a standard with iterations for different distribution media) would avoid the risks of creating a disincentive to research, development, and production. Transmission and consumer equipment manufacturers would likely be slow to build to multi-standards or to a standard that may be short-lived.[8] We again respectfully urge the Commission to defer any action that would prejudice allocation of rf spectrum to HDTV until it is time to select a single HDTV standard that is suitable for all distribution media.

V. AN HDTV PRODUCTION STANDARD FOR THE UNITED STATES SHOULD BE PREDICATED UPON THE PARAMETERS OF THE DOMESTIC HDTV TRANSMISSION STANDARD, NOT VICE VERSA.

There exists a danger that the HDTV transmission standard for the United States will be predicated on the parameters of a production standard, rather than vice-versa. This inverted logic is being driven primarily by CBS and the Japan Broadcasting Corporation ("NHK") and is

---

7/ See, for example, Comments of MST at 5, 30-31, 33, 36; Comments of CPB et al. at 16-21; Comments of Cox at 12-16; Comments of INTV at 3-7; and Comments of NAB at 9-10.

8/ See, for example, Comments of GE at 9-10; Comments of NAB at 7-8, 13, 15-17; and Comments of National Telecommunications and Information Administration at 6.

reflected in their first-round comments in which both support prompt standardization of NHK's 1125-line/60 fields per second ("1125/60") production standard.[9] We believe that the CBS-NHK position is wrong as a matter of public policy.

It would be inappropriate to permit perceived support for a particular production standard to dictate the characteristics of a domestic HDTV transmission standard. It makes much more sense to select an HDTV transmission standard that meets the needs of broadcasters and consumers -- and then to select a production standard that is based on comparable values.[10] Accordingly, neither the 1125/60, nor any other, HDTV production standard should be selected for this country until the parameters of the United States' HDTV transmission standard are known. Since this country has only recently embarked upon its search for an HDTV

9/ See Comments of Japan Broadcasting Corporation ("NHK") at 7-8; and Comments of CBS, Inc. at 8.

10/ If the production and transmission standards were not well matched (for example, if the U.S. were to adopt the 1125/60 production standard, but insisted, as we think it must, upon an NTSC-compatible transmission standard based upon 525-lines and 59.94 Hz), a complex format transcoder would be required at the studio. Such transcoding would result in picture degradation that would not occur if the production standard were well matched with an NTSC-compatible transmission standard (e.g., a production standard based upon the NTSC field rate.)

transmission standard, we believe that it is too early to commit to a production format.

Moreover, the degree of support for the 1125/60-based production standard should not be overstated; by no means does it receive universal acclaim. In a recent ballot within the Advanced Television Systems Committee, adoption of 1125/60 as a production standard was opposed by a broad array of broadcasters and manufacturers, including NAB, MST, ABC, NBC, RCA, Zenith, and NAPC. Further, a worldwide production standard will not be voted upon until the Consultative Committee for International Radio ("CCIR") meeting in 1990. Even then it is highly improbable that the 1125/60 (or any other) production standard will be selected as the single, worldwide standard. Rather, the European Community will likely select a production standard that is well matched to its local transmission needs (e.g., a production standard based on 1250-lines, 50 Hz), and Japan will presumably support the 1125/60 production standard. The United States should likewise accommodate its own environment and adopt a production standard which has common parameter values with the NTSC standard, in particular, NTSC's 59.94 Hz field rate. NTSC is the format used by the 130+ million TV sets and the multi-billion dollars worth of broadcast equipment that constitute the installed base of television product in this country.

Most important, adoption of the non-NTSC-compatible NHK 1125/60 transmission format (called "MUSE") would not be in the public interest because it is not well matched with the U.S. television environment. This is most evident in the TV-viewer's home. If the 1125/60 transmission format were adopted, it would be necessary to decode the television signal before it could be used by any of today's color television receivers.[11] NHK optimistically projects that such decoders would be made available for less than $50 apiece.[12] Yet this would require an aggregate consumer expenditure exceeding $5 billion dollars -- an expenditure that consumers did not bargain for when they bought their current TV sets.[13]

VI. HDS-NA HAS GREAT POTENTIAL FOR FULFILLING THE NEEDS OF AN HDTV STANDARD FOR THE UNITED STATES.

NAPC is very encouraged by the first-round comments. The HDTV system we are developing appears to be

---

11/ Compatibility would require decoding the MUSE signal to RGB (or YR-YB-Y) components with a 60 Hz field rate, and then encoding these components into an NTSC-compatible 59.94 field rate.

12/ Comments of NHK at 19.

13/ Simulcasting is unlikely to be a practical alternative to decoding or otherwise to solving the incompatibility problem. Simulcasting would require 6 MHz for each VHF and UHF licensee in addition to whatever spectrum is needed for HDTV.

well-suited to meet the needs expressed by a broad spectrum of the television industry. We look forward with confidence to a comparative evaluation of our system and others.

Development of our HDS-NA technology is proceeding rapidly. Both the HDMAC-60 master satellite distribution signal and the HDNTSC terrestrial broadcast and CATV distribution signal will be demonstrated publicly this year. These demonstrations will clearly show the feasibility of an NTSC-compatible HDTV format supported by the necessary technology to bring the HDTV signal from the program source to the television receiver.

VII. CONCLUSION

NAPC will continue its active participation in the work of the Commission's blue ribbon panel and its committees and subcommittees.[14] We are also eager to begin work with the National Association of Broadcasters' HDTV project office, the Association of Maximum Service Telecasters, and others in the industry to establish an HDTV format for the United States that meets the criteria

---

14/ NAPC endorses the request the Electronic Industries Association recently made to Chairman Wiley of the Commission's Advisory Committee that television equipment manufacturers be given a greater leadership role within the Advisory Committee structure. A proper ATV recommendation would not be possible without the active involvement and commitment of this group.

described in our first-round comments and in these reply comments. We stand ready to assist the Commission in its efforts to ensure that the benefits of HDTV are made available to the American public in a manner that promotes the public interest.

Respectfully submitted,

NORTH AMERICAN PHILIPS
CORPORATION

Edward J. Goldstein

Edward J. Goldstein
Deputy General Counsel

Dr. Larry J. French
Dr. Caaj Greebe
William F. Guerinot
Ronald L. Marsiglio
Charles W. Rhodes
Dr. Mark M. Rochkind
Arpad G. Toth
Mikhail Tsinberg

100 East 42nd Street
New York, New York 10017
(212) 850-5457

Of Counsel:
James L. Casserly
Squire, Sanders & Dempsey
1201 Pennsylvania Ave., N.W.
Washington, D.C. 20004
(202) 626-6717

January 19, 1988

CERTIFICATE OF SERVICE

I hereby certify that on this 19th day of January, 1988, copies of the foregoing Reply Comments of North American Philips Corporation were mailed by first class mail to the individuals on the attached list.

Brenda J. Budd

Brenda J. Budd

SERVICE LIST

ORGANIZATION	ADDRESS
Federal Communications Commission	Alex D. Felker * Chief Mass Media Bureau Federal Communications Commission Room 314 1919 M Street, N.W. Washington, D.C. 20554 Thomas P. Stanley * Chief Engineer Office of Engineering and Technology Federal Communications Commission Room 7002 2025 M Street, N.W. Washington, D.C. 20554 William Hassinger * Engineering Assistant to the Bureau Chief Mass Media Bureau Room 314 1919 M Street, N.W. Washington, D.C. 20554 Victor Tawil * Electronics Engineer Office of Engineering and Technology Room 7130 2025 M Street, N.W. Washington, D.C. 20554
American Family Broadcast Group, Inc.	Robert A. Beizer Schnader Harrison Segal & Lewis 1111 - 19th Street, N.W. Washington, D.C. 20036
Association of Independent Television Stations, Inc.	J. Laurent Scharff James M. Smith Pierson, Ball & Dowd 1200 - 18th Street, N.W. Washington, D.C. 20036

ORGANIZATION	ADDRESS
Association of Maximum Service Telecasters, Inc.	Jonathan D. Blake Gregory M. Schmidt J. Daryl Dodson Covington & Burling 1201 Pennsylvania Ave., N.W. P.O. Box 7566 Washington, D.C. 20044
A-Vision	Ken Lager Chairman 75 Marathon Street Arlington, MA 02174
Black Television Workshop of Los Angeles, Inc.	Booker T. Wade, Jr. President Black Television Workshop of Los Angeles, Inc. 4241 Redwood Avenue Los Angeles, CA 90066
Blonder Tongue Laboratories	Benito Gaguine Fley, Shuebruk, Gaguine, Bows and Braun 1211 Connecticut Avenue, N.W. Washington, D.C. 20036-2768
Bonneville International Corporation	Kenneth E. Satten Wilkinson, Barker, Knauer & Quinn 1735 New York Avenue, N.W. Washington, D.C. 20006
Broadcasting Technology Association, Japan	2-8-12 Nishi-Shimbashi Minato-Ku Tokyo, Japan
Walt W. Bundy, Jr.	Walt W. Bundy, Jr. 2058 Matsons Circle Villanova, PA 19085
Capital Cities/ABC Inc.	Joel Rosenbloom John Payton Wilmer, Cutler & Pickering 2445 M Street, N.W. Washington, D.C. 20037

ORGANIZATION	ADDRESS
CBS, Inc.	Joseph DeFranco 1800 M Street, N.W. Washington, D.C. 20036 John W. Zuder 51 West 52nd Street New York, New York 10019
Center for Advanced Television Studies	David Sillman c/o Public Broadcasting Service 1320 Braddock Place Alexandria, Virginia 22314
Chronicle Broadcasting Co.	James P. Riley Fletcher, Heald & Hildreth Suite 400 1225 Connecticut Avenue, N.W. Washington, D.C. 20036
Consumer Electronics Group of the Electronics Industries Association	Gary J. Shapiro, Esquire Staff Vice President Government & Legal Affairs Consumer Electronics Group 2000 Eye Street, N.W. Washington, D.C. 20006
Corporation for Public Broadcasting, The National Association of Public Television Stations, and the Public Broadcasting Service	Arthur Pankopf Susan Dillion Corporation for Public Broadcasting 1111 - 16th Street, N.W. Washington, D.C. 20036 Baryn S. Futa Martha Malkin Zarnow National Association of Public Television Stations 1818 N Street, N.W. Washington, D.C. 20036 Paula A. Jameson Barbara S. Wellbery Louise Lynch Public Broadcasting Service 1320 Braddock Place Alexandria VA 22314
Cosmopolitan Broadcasting Corporation	Peter Gutmann Pepper & Corazzini 200 Montgomery Building 1776 K Street, N.W. Washington, D.C. 20006

ORGANIZATION	ADDRESS
Cosmos Broadcasting Corporation	John A. Rafter Werner S. Hartenberger John S. Logan Dow, Lohnes & Albertson 1255 - 23rd Street, N.W. Washington, D.C. 20037
Cox Enterprises, Inc.	John A. Rafter Werner S. Hartenberger John S. Logan Dow, Lohnes & Albertson 1255 - 23rd Street, N.W. Washington, D.C. 20037
David Sarnoff Research Center, Inc.	Dr. James E. Carnes Vice President Consumer Electronics and Information Sciences David Sarnoff Research Center, Inc. CN 5300 Washington Road Princeton, N.J. 08543-5300
Del Rey Group	Del Rey Group P.O. Box 9254 Marina Del Rey, CA 90292
Digideck	Britt Conner Suite 210 1503 Grant Road Mountain View, CA 94040
Dolby Laboratories	David P. Robinsin Dolby Laboratories 100 Potrero Street San Francisco, CA 94103 Jeffrey Krauss Suite 450 15200 Shady Grove Road Rockville, Maryland 20850
Faroudja Laboratories	Yves Faroudja President Faroudja Laboratories 946 Benicia Avenue Sunnyvale, CA 94086

ORGANIZATION	ADDRESS
Fisher Broadcasting Inc.	Richard R. Zaragoza Jonathan W. Emord Fisher, Wayland, Cooper & Leader Suite 800 1225 - 23rd Street, N.W. Washington, D.C. 20037
General Instrument Corporation	Quincy Rodgers Fourth Floor 1155 21st Street, N.W. Washington, D.C. 20036
GE Consumer Electronics Business	Dr. D. Joseph Donahue Vice President, Sr. Scientist 600 North Sherman Drive Indianapolis, IN 46201
George N. Gillett, Jr.	Vincent A. Pepper Pepper & Corazzini 1776 K Street, N.W. Washington, D.C. 20006
Great American Broadcasting Co., McGraw Hill Broadcasting Co., Inc. and New York Times Company	Bernard Koteen Arthur B. Goodkind Kotten & Naftalin 1150 Connecticut Avenue, N.W. Washington, D.C. 20036
The Hearst Corporation	Mickey L. Hooten Vice President and General Manager of Television The Hearst Corporation 959 Eighth Avenue New York, New York 10019
Hitachi	Hitachi Central Research Laboratory Hitachi, Ltd. Post Office Box 2 Kokobunjl, Tokyo 185
Home Box Office, Inc.	(NO ADDRESS PROVIDED)
Hughes Communications Galaxy, Inc.	Ben C. Fisher Fisher, Wayland, Cooper & Leader Suite 800 1255 23rd Street, N.W. Washington, D.C. 20037-1125

ORGANIZATION	ADDRESS
King Broadcasting Co.	Marvin Rosenberg Edward W. Hummers, Jr. Fletcher, Heald & Hildreth Suite 400 1225 Connecticut Avenue, N.W. Washington, D.C. 20036
Land Mobile Communications Council	Charles M. Meehan Chairman Land Mobile Communications Council Suite 1000 1150 17th street, N.W. Washington, D.C. 20036 Herb L.Massie President, Land Mobile Communications Council 80 East Jackson Boulevard Chicago, Illinois 60604
Matsushita Electric Corporation of America and Matsushita Electric Industrial Group Companies	Mr. Akiya Imura President & Chief Executive Officer Matsushita Electric Corporation of America One Panasonic Way Secaucus, N.J. 07094
Meredith Corporation	Michael H. Bader John Wells King Haley, Bader & Potts Suite 600 2000 M Street, N.W. Washington, D.C. 20036
Metrovision, Inc., NewChannels Corporation, and Sammons Communications, Inc.	John I. Davis David J. Wittenstein Elizabeth J. Gustafson Dow, Lohnes & Albertson Fifth Floor 1255 23rd Street, N.W. Washington, D.C. 20037
MST	Jonathan D. Blake Gregory M. Schmidt Michael E. Tankersley Martin Wald Covington & Burling 1201 Pennsylvania Avenue, N.W. P.O. Box 7566 Washington, D.C. 20044

ORGANIZATION	ADDRESS
National Association of Broadcasters	Henry L. Baumann National Association of Broadcasters 1771 N Street, N.W. Washington, D.C. 20036
National Black Media Coalition & NAACP	David Honig 6032 Ocean Pines Berlin, Maryland 21811
National Broadcasting Company, Inc.	Howard Monderer Molly Pauker National Broadcasting Company, Inc. Suite 807 1825 K Street, N.W. Washington, D.C. 20006
National Cable Television Association, Inc.	Brenda L. Fox Loretta P. Polk 1724 Massachusetts Avenue, N.W. Washington, D.C. 20036
National Captioning Institute, Inc.	Peter Tannenwald Arent, Fox, Kintner, Plotkin & Kahn 1050 Connecticut Avenue, N.W. Washington, D.C. 20036-5339 Robert Silber, Esquire Counsel Two Skyline Place Suite 1500 5203 Leesburg Pike Falls Church, VA 22041
National Public Radio	Lois Schiffer Karen Christensen National Public Radio 2025 M Street, N.W. Washington, D.C. 20036
National Telecommunications and Information Association	Honorable Alfred C. Sikes NTIA Room 4898 14th & Constitution Avenue, N.W. Washington, D.C. 20230

ORGANIZATION	ADDRESS
Professor W. Russell Neuman	Professor W. Russel Neuman Director Research Program on Communications Policy E53-367 Massachusetts Institute of Technology Cambridge, Massachusetts 02139
New York Institute of of Technology	William E. Glenn, Ph.D Science and Technology Research Center 8000 N. Ocean Drive Diania, Florida 33004
NHK - The Japan Broadcasting Corporation	Stephen A. Sharp Miriam C. Kircher Skadden, Arps, Slate, Meagher & Flom 1440 New York Avenue, N.W. Washington, D.C. 20005
Nippon Television Network Corporation	Sumihisa Sakuma Executive Managing Director 14 Niban-cho Chiyoda-ku Tokyo, Japan
Outlet Communications, Inc.	Gerald Scher Sundlun, Scher & Singer Suite 460 1331 Pennsylvania Avenue, N.W. Washington, D.C. 20004
Post-Newsweek Stations, Inc.	L. Stanley Paige Vice President for Legal Affairs Post-Newsweek Stations, Inc. 1150 - 15th Street, N.W. Washington, D.C. 20071
Pulitzer Broadcasting Co.	Erwin G. Krasnow Verner, Liipfert, Bernhard, McPherson & Hand Suite 1000 1660 L Street, N.W. Washington, D.C. 20036
Radio New Jersey	Lawrence J. Tighe, Jr. P.O. Box 1000 Hackettstown, NJ 07840

ORGANIZATION	ADDRESS
Radio Telecom & Technology, Inc.	Peter Tannenwald 1050 Connecticut Avenue, N.W. Washington, D.C. 20036-5339
Radio Television News Director Association	J. Laurent Scharff James M. Smith Pierson, Ball & Dowd 1200 18th Street, N.W. Washington, D.C. 20036
Rogers Cablesystems Engineering	N.F. Hamilton-Piercy Vice President, Engineering & Technical Services c/o Rogers Communications, Inc. Suite 2602, Commercial Union Tower P.O. Box 249, T.D. Centre Toronto, Ontario M5K1J5
Satellite Broadcasting and and Communications Association of America	Andrew D. Lipman Pepper, Hamilton & Scheetz 1777 F Street, N.W. Washington, D.C. 20006
Satellite Communications Section of the Information and Telecommunications Technologies Group of the Electronic Industries Association	Eric J. Schimmel Staff Vice President Information and Telecommunications Technologies Group 2001 Eye Street, N.W. Washington, D.C. 20006 H. Allen Ecker Chairman Satellite Communications Section 2001 Eye Street, N.W. Washington, D.C. 20006
Scientific-Atlanta's	James O. Farmer Division Technical Manager Scientific Atlanta Broadband Communications P.O. Box 105027 Atlanta, Georgia 30348

ORGANIZATION	ADDRESS
William F. Schreiber	William F. Schreiber Professor of Electrical Engineering Director Advanced Television Research Program E15-387 Massachusetts Institute of Technology Cambridge, Mass. 02139
Scripps-Howard Broadcasting Co.	Donald P. Zeifang Kenneth C. Howard, Jr. Baker & Hostetler 1050 Connecticut Avenue, N.W. Washington, D.C. 20036
Takeshi Sakamoto Japan Satellite Broadcasting, Inc.	Yves Faroudja Faroudja Laboratories, Inc. 946 Benicia Avenue Sunnyvale, CA 94086
Time Incorporated	Brian Conboy Vice President - Government Affairs Time, Inc. Suite 850 1050 Connecticut Avenue, NW.. Washington, D.C. 20036-5334
Times Mirror Broadcasting	David R. Anderson Timothy N. Black Wilmer, Cutler & Pickering 2445 M Street, N.W. Washington, D.C. 20037
Toshiba America, Inc.	S. Yasuda 2900 MacArthur Blvd. Northbrook, IL 60062-2089
Tribune Broadcasting Co.	Robert A. Beizer Schnader, Harrison, Segal & Lewis 1111 - 19th Street, N.W. Washington, D.C. 20036
Viacom International, Inc.	Matthew D. Miller Vice President, Science & Technology Viacom International, Inc. 121 Avenue of the Americas New York, N.Y. 10036